

Manuscript egusphere-2025-4976 “A combined storyline-statistical approach for conditional extreme event attribution”

Dear Editor and Reviewers,

Thank you for accepting our manuscript. We appreciate the time and effort you have invested in the review process.

We have carefully addressed the remaining points and incorporated your suggestions into the revised manuscript. The corresponding changes have been implemented accordingly.

- L8-9 in the abstract: Our results show that the 2018 heatwave, with an intensity of 2.2 °C and a return period of 1-in-277-years today, becomes a 6.6 °C event with a 1-in-26-year probability in a +4K world in the absence of other dynamical trends.”
- L122: Each storyline represents a physically consistent, plausible scenario in which the event could have developed under an alternative thermodynamic background while holding the circulation fixed.
- L212-214: Even though the analogues dataset is large enough for deriving empirical return periods, the generalized extreme value distribution provides a smooth interpolation and confidence intervals. The adequacy of the fit is supported by the agreement between empirical and fitted return levels (Fig. 7), indicating a good representation of the upper tail with no systematic deviations.
- L262-264: Here, it indicates that the dynamical pathway leading to the 2018 heatwave with a mean intensity of 2.2 °C would have produced an event that was 6 days shorter and with a 0.5 °C mean intensity in the absence of human-induced global warming.
- L378-379 (version 3): “The fact that the upper tail...” was removed.

Kind regards,

Dalena,

on behalf of all co-authors.